Correspondence

Exacerbation of onychophagia and onychotillomania during the COVID-19 pandemic: a survey-based study

Dear Editor,

Body-focused repetitive behavior (BFRB) includes hair pulling, skin picking, onychophagia, and onychotillomania, with significant psychosocial and functional impact.[1] BFRBs are associated with comorbid psychiatric conditions, including anxiety disorders and obsessive–compulsive disorder (OCD).[1] Therefore, we hypothesized that the coronavirus disease 2019 (COVID-19) pandemic and accompanying strict social isolation mandates would increase anxiety, and we aimed to assess whether nail pickers or biters experienced worsening of symptoms during the pandemic.

After approval by the Weill Cornell Medicine Institutional Review Board, the survey was shared among members of nail-BFRB Facebook and Reddit groups and with the HabitAware community (consumers of a wearable device that assists with cessation of BFRBs). Survey responses were collected 11/2021–4/2022. The modified Massachusetts General Hospital Hair Pulling Scale (MGH-HPS) was used to assess changes in behaviors before, during the peak, and post-peak of the COVID-19 pandemic. The modified MGH-HPS was chosen because of the lack of validated nail picking/biting scales in the literature and was found to have good internal consistency in a recent study.[2] Means were compared using paired-sample t-tests, with significance set at an adjusted P value of ≤ 0.0036 for multiple comparisons.

A total of 300 participants were enrolled, with 105 completing the survey (response rate 35%) and included in the final analysis. The median age (IQR) of participants was 32 (17.5) years, with 92% females ($n = 97$) and majority Whites ($n = 94$, 90%) (Table 1). The most common psychiatric comorbidities were depression ($n = 72$, 69%) and anxiety ($n = 68$, 65%). Forty-one (39%) participants reported nail-picking, eight (8%) nail-biting, and 56 (53%) both. Fifty-three (50%) participants self-rated BFRB worsening during the pandemic peak. Thirty-three (31%) participants received treatment before COVID-19, increasing to 42 (40%) during the pandemic peak. Twenty-six percent ($n = 27$) reported that COVID-19 prevented them from seeking treatment, and 49% ($n = 51$) reported wanting treatment during COVID-19. Before the pandemic, 13 patients (12%) had virtual treatment or counseling, increasing to 32 patients (30%) during the pandemic. Increased anxiety ($n = 47$, 45%) and screen time ($n = 37$, 35%) were the most commonly self-reported contributors to symptom worsening during COVID-19.

Participants with nail-picking/biting during the pandemic compared to pre-pandemic reported increased frequency of urges

Table 1 Demographics and nail-BFRB therapy ($n = 105$)

Age, median (IQR)	32 (17.5)
Location, *n* (%)	
United States	71 (68%)
Outside of the United States	32 (30%)
Not answered	2 (2%)
Race/ethnicity, *n* (%)	
Asian	0 (0%)
American Indian or Alaska Native	1 (1%)
Black or African American	2 (2%)
Latino, or Spanish origin	2 (2%)
Middle Eastern or North African	2 (2%)
Native Hawaiian or Other Pacific Islander	0 (0%)
White	94 (90%)
Other	2 (2%)
Not answered	2 (2%)
Gender, *n* (%)	
Female	97 (92%)
Male	3 (3%)
Nonbinary	4 (4%)
Did not disclose	1 (1%)
Nail-BFRB classification, *n* (%)	
Nail-picking	41 (39%)
Nail-biting	8 (8%)
Both	56 (53%)
History of other psychiatric disorder, *n* (%)	88 (84%)
OCD	21 (20%)
Anxiety disorder	68 (65%)
Depression	72 (69%)
Bipolar disorder	3 (3%)
Schizophrenia	0 (0%)
Other[a]	13 (12%)
Self-rated impact of COVID-19 on BFRB, *n* (%)	
Improved	13 (12%)
No change	39 (37%)
Worsened	53 (50%)
Type of therapy received before COVID-19, *n* (%)	
In-person medical treatment	11 (10%)
In-person counseling/therapy	18 (17%)
Virtual medical treatment	4 (4%)
Virtual counseling/therapy	11 (10%)
Other	2 (2%)
No treatment	72 (69%)
Type of therapy received during COVID-19, *n* (%)	
In-person medical treatment	8 (8%)
In-person counseling/therapy	12 (11%)
Virtual medical treatment	11 (10%)
Virtual counseling/therapy	31 (30%)
Other	4 (4%)
No treatment	63 (60%)
COVID interrupted ability to obtain treatment, *n* (%)	
Yes	27 (26%)
No	76 (72%)
Not answered	2 (2%)

Table 1 Continued

Sought or had a desire to seek treatment during COVID-19, *n* (%)	
Yes	51 (49%)
No	54 (51%)
Contributors to worsening of symptoms during COVID-19, *n* (%)	
Changes in anxiety	47 (45%)
Changes in sleep routines	24 (23%)
Changes to exercise routines	16 (15%)
Changes to financial situation	24 (23%)
Changes to amount of time spent at home	32 (30%)
Seeing fewer people in person	29 (28%)
New or worsening concern for the future	31 (30%)
Spending less time in public	26 (25%)
More time spent watching TV/movies, reading, talking on the phone, or similar activities	37 (35%)
Changes to daily routine	31 (30%)
Increased childcare needs	2 (2%)
Other	1 (1%)

[a]Other comorbid psychiatric conditions included attention deficit hyperactivity disorder (ADHD) (6), post-traumatic stress disorder (PTSD) (3), borderline personality disorder (2), panic disorder (1), and insomnia (1).

(0.32, $P = 0.00$), increased intensity of urges (0.38, $P = 0.00$), decreased ability to control urges (0.32, $P = 0.00$), increased frequency of behavior (0.26, $P = 0.00$), and increased associated distress (0.29, $P = 0.00$) (Table 2). There was a non-significant increase in mean modified MGH-HPS scores post-peak pandemic vs. pre-pandemic of intensity of urges and associated distress (Table 2).

The impact of COVID-19 on frequency and severity of nail-BFRBs has not previously been characterized. In a survey-based study of 460 participants with skin picking or hair pulling disorders, the majority (67.2%) reported increased BFRB symptoms during the pandemic, with increased distress and functional impairment.[3] Our study similarly demonstrates that COVID-19 had a detrimental effect on individuals with nail-BFRBs.

Post-peak pandemic, participants may continue to experience higher levels of associated distress and intensity of urges to nail pick/bite compared to pre-pandemic levels, suggesting people with nail-BFRBs may not have returned to baseline levels and may require additional follow-up. In our study, many participants wanted but did not receive treatment, which may be partially due to in-person visit restrictions. Telemedicine can be used to manage dermatologic conditions,[4] but the efficacy of virtual vs. in-person visits for management of nail-BFRBs requires further study. Dermatologists should become comfortable using telemedicine to treat and follow patients with BFRBs, which is time and cost saving.[4] Nail picking/biting can be challenging to treat and usually requires a multidisciplinary approach.[5]

Limitations include small sample size, low response rate, recall bias, utilizing a scale not designed for nail-BFRBs, and self-reported survey design.

In summary, the COVID-19 pandemic has negatively impacted patients with nail-BFRBs. Dermatologists should be aware of the impact of COVID-19 and ensure that these patients are adequately treated, particularly in the post-peak pandemic setting.

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IRB approval

This study was approved by the Weill Cornell Medicine Institutional Review Board under protocol number 20-12023079.

Table 2 Modified Massachusetts General Hospital Hairpulling Scale for Nail-BFRBs mean scores before, peak, and post-peak of COVID

Nail picking or biting	Pre-COVID-19	Peak of COVID-19 (Δ, *P* value)[a]	Post-peak (11/2021–3/2022) (Δ, *P* value)[b]
Frequency of urges	2.33	2.60 (0.32, $P = 1.47E-04$*)	2.27 (0.11, $P = 2.22E-01$)
Intensity of urges	2.19	2.57 (0.38, $P = 6.80E-08$*)	2.40 (0.20, $P = 1.07E-02$)
Ability to control urges	2.30	2.62 (0.32, $P = 8.47E-05$*)	2.47 (0.16, $P = 7.68E-02$)
Frequency of nail picking	2.33	2.59 (0.26, $P = 1.37E-03$*)	2.32 (−0.01, $P = 9.48E-01$)
Attempts to resist nail picking	2.08	2.26 (0.18, $P = 1.41E-02$)	2.09 (0.01, $P = 8.83E-01$)
Control over nail picking	2.91	3.04 (0.14, $P = 8.58E-02$)	2.82 (−0.09, $P = 3.53E-01$)
Associated distress	1.95	2.24 (0.29, $P = 8.87E-04$*)	2.17 (0.22, $P = 1.66E-02$)

The Modified Massachusetts General Hospital Hairpulling Scale for Nail-BFRBs is on a scale of 0–4, with higher values indicating increased frequency or severity of symptoms and decreased ability or attempts to control symptoms.
[a]Mean change in scores between pre-COVID-19 and peak of COVID-19 and associated *P* value.
[b]Mean change in scores between pre-COVID-19 and post-peak and associated *P* value.
*Denotes significance, with an adjusted *P* value of ≤0.0036 for multiple comparisons.

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References

1 Houghton DC, Alexander JR, Bauer CC, Woods DW. Body-focused repetitive behaviors: more prevalent than once thought? *Psychiatry Res*. 2018;**270**:389–93. https://doi.org/10.1016/j.psychres.2018.10.002
2 Maraz A, Hende B, Urbán R, Demetrovics Z. Pathological grooming: evidence for a single factor behind trichotillomania, skin picking and nail biting. *PLoS One*. 2017;**12**(9):e0183806. https://doi.org/10.1371/journal.pone.0183806
3 Pathoulas JT, Olson SJ, Idnani A, Farah RS, Hordinsky MK, Widge AS. Cross-sectional survey examining skin picking and hair pulling disorders during the COVID-19 pandemic. *J Am Acad Dermatol*. 2021;**84**(3):771–3. https://doi.org/10.1016/j.jaad.2020.11.011
4 Wang RH, Barbieri JS, Nguyen HP, Stavert R, Forman HP, Bolognia JL, et al. Clinical effectiveness and cost-effectiveness of teledermatology: where are we now, and what are the barriers to adoption? *J Am Acad Dermatol*. 2020;**83**(1):299–307. https://doi.org/10.1016/j.jaad.2020.01.065
5 Halteh P, Scher RK, Lipner SR. Onychophagia: a nail-biting conundrum for physicians. *J Dermatolog Treat*. 2017;**28**(2):166–72. https://doi.org/10.1080/09546634.2016.1200711